Developing Students' Listening Using eBooks: Using Technology to Transform Student Writing into Listening Practice

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INTRODUCTION

Students of English in Japan often have a greater reading vocabulary than a listening and speaking vocabulary. Students may understand many words in writing, but fail to recognize those same words when spoken in a sentence. This article explains how I used a combination of student writing and eBook technology to provide listening practice for my freshmen university students. The eBook reader that was used in this project was the Microsoft Reader.

Figure 1 shows the beginning of a story written by a student, which was then transformed into an eBook or an electronic book. This eBook was combined with 23 other student-written eBooks and used in classes that combined reading and listening practice using a computer lab. Students watched and listened as the computer read their stories using a hyperlinked Word document. (The left half of Figure 2 shows the Word document, while the right half of Figure 2 shows the Microsoft Reader displaying an eBook).

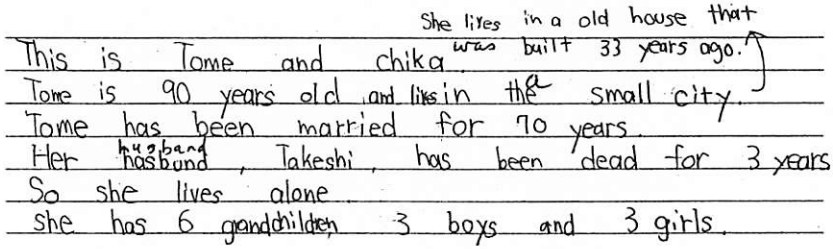

Figure 1 – An Excerpt from a Student-written Story

The remainder of this article explains how these eBooks were created and gives some informal survey results. I will begin by discussing my teaching context and providing background information on eBook technology.

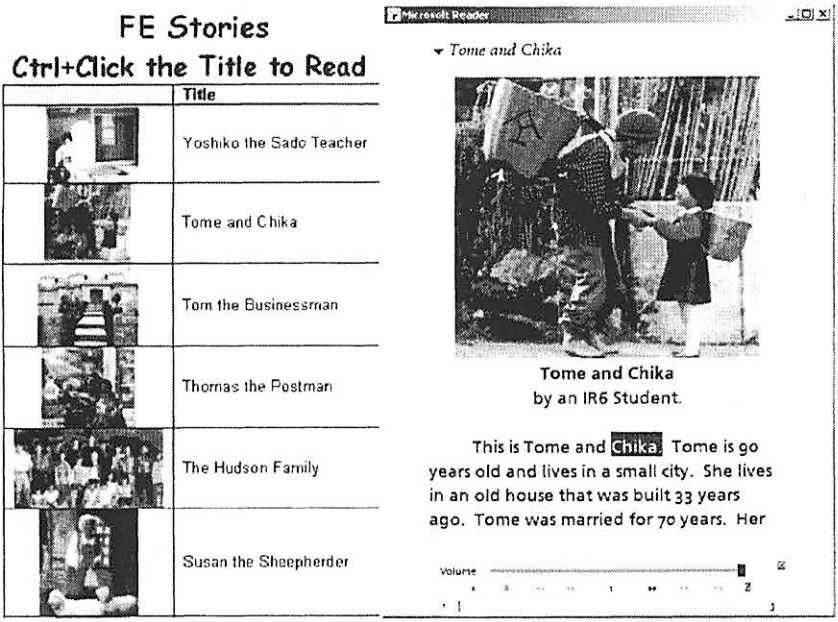

Figure 2 – Using a Word document to Read an eBook

THE TEACHING CONTEXT

I teach four classes of Freshman English (FE) at Asia University. FE is a required, year-long, integrated-skills course that meets with students for 45 minutes, 5 days a week. My FE students' abilities range from high-beginner to lower-intermediate in the areas of listening to and speaking English.

After studying units on lifestyles and jobs, the students wrote and presented a short story in a dialogue format. Students were given pictures of people and jobs from which to write their stories. As the students listened to other students' presentations, they were asked to take notes on the presentations. An informal survey to see how much the students understood of what the other students were saying gave the following results:

% Understood	% of Ss (n=75)
50	32%
60	1%
70	3%
75	32%
80	3%
85	21%
95	8%

The reasons students checked for not understanding included (a) they could not hear what the other students were saying (many students spoke very softly), (b) they did not know the words, (c) they could not understand the pronunciation of the other students, and (d) the sentences were too difficult. These results and my interactions with these students indicate that many of them need extra listening practice.

THE PROBLEM: PROVIDING EXTRA LISTENING PRACTICE

There is often not enough class time (especially in an integrated-skills course) to give students the listening practice that they need. Although there are many excellent listening courses, these courses tend to be expensive for students to purchase for their own independent practice. Teachers need an inexpensive method of generating level-appropriate listening activities that are also perceived by students as interesting and relevant to their current studies. These activities should be something that students can do after class and in their own homes. One promising technology is eBooks with their Readers' text-to-speech capabilities.

WHAT ARE EBOOKS?

EBooks are electronic books (and other documents) that can be read on desktop computers, laptops, handhelds, and pocket PCs, as well as dedicated eBook devices. EBooks include everything from public-domain texts written in the 1600's to the most recent best-sellers. Project Gutenberg (a compiler of public-domain texts) has created 6,267 eBooks as of November 8, 2002 (p. 1).

EBooks are distributed via the Internet, as is the free eBook reader software. Some universities in the United States are using textbooks in the eBook format so students need only to carry a laptop, rather than a foot-high stack of textbooks, to their classes. Reference books are also being made in eBook form. OverDrive (a company that both converts printed books to eBooks and sells commercial software to create eBooks) reports that there are about 450 publishers offering commercial eBooks (Reid, 2002, p. 1). The main complaint people have about eBooks is that they do not like reading on a computer screen. However, I have not found this to be a problem when using the properly-sized font.

Why do People Like eBooks?

Most of the things you do with paper books you can also do with eBooks. For example, you can highlight passages, make annotations, create bookmarks, and add simple drawings. EBooks have additional advantages, which include allowing you to choose the

size of the font that you use while reading. If you are near-sighted, you can make the font quite large. You can quickly look up a word in the built-in dictionary. It is also easy to search the entire book for a specific word or phrase. If you want to know the first place where someone (for example, a character named *Ernest*) is mentioned, then you can quickly search the book starting with page 1.

Several eBook readers also include recent text-to-speech technology. This means that instead of reading a book or a document, you can now listen to the book read by the computer. For native (and near-native) English speakers, this also provides an excellent way of proofreading a written text. Listening to text read by a computer can help you detect those little errors that are so easy to overlook in writing that has become very familiar.

What is Text-to-Speech Technology?

Text-to-speech technology is a by-product of the US 1998 Workforce Investment Act, which includes the Rehabilitation Act (GSA, 2002, p. 1). One result of Section 508 of the Rehabilitation Act has been the development of text-to-speech technology to enable the blind and visually impaired to freely access the information available via technology (ScanSoft, 2002, *Creating Access*..., p. 2).

Text-to-speech technology converts text into computer-generated speech using various algorithms. Advanced text-to-speech algorithms change text into "a phonetic representation with markers for stress and other pronunciation guides" (ScanSoft, 2002, *ScanSoft RealSpeak*..., p. 3). The result is then converted into sound using actual recordings of diphones, which contain all the appropriate co-articulation and vocalizations (ScanSoft, 2002, *ScanSoft RealSpeak*..., p. 2). Depending on the sophistication of the software, the results can sound quite natural.

The text-to-speech algorithms included with Microsoft Reader are not the most sophisticated, but they are comprehensible. I have noticed only a few instances where English words were mispronounced. In all cases, the words were homonyms and their function within the sentence had been misinterpreted. For example, the Microsoft Reader mispronounced the verb *"live"* in the sentence: *"So, now James and Grace live by themselves."* In this instance, it obviously interpreted this verb as an adjective, but properly interprets (and pronounces) it in other contexts. Uncommon foreign words (such as Japanese names) are pronounced using standard English phonetics, so actually, they will be mispronounced.

For the rest of this article, I will refer to playing and listening to eBooks using text-to-speech technology as "spoken eBooks."

Why use Spoken eBooks with EFL/ESL Students?

Spoken eBooks can help students associate sounds from spoken words with their written counterparts. Although electronic dictionaries are useful for learning the pronunciation of words in isolation, spoken eBooks provide the pronunciation of those same words within the context of a sentence. As an eBook is read, each word is highlighted to help the students associate the sounds being heard with individual written words.

Using spoken eBooks has the advantages of doing extensive reading with the addition of building audio associations for the words in the books. As students spend time listening to eBooks, the vocabulary in those books will move from passive to active vocabulary. EBooks are read at a fixed speed of about 130~145 words per minute. This constant rate of speed can encourage students to continue reading when they encounter difficult words and help them learn to infer the meaning of those words from the context, rather than pausing to think about or look up those words. However, eBooks also allow students to pause and replay sections of the eBook whenever they want to do so. This is done independently of the teacher and other students. Individuals can choose to replay difficult passages as many times as necessary to understand them aurally. Using eBooks with headphones in a computer laboratory allows students to listen with fewer distractions, using a volume that is comfortable for them. Students generally like using technology and might spend more time practicing listening than with conventional textbooks.

Teachers can easily author eBooks, customizing the content to their students' reading levels and course context. Higher-level students can even be taught how to create eBooks from their writing. They could then listen to their eBooks, and practice speaking with them before giving a presentation.

The Microsoft eBook Reader

There are several providers of eBook reader software. (Web addresses for a number of them are included in Appendix D.) The main reasons I chose the Microsoft Reader for this project are as follows. It is a widely available eBook reader with free eBook authoring software. It has a text-to-speech add-in, making it possible to listen to eBooks. More importantly, I thought that it was highly likely that the administrators of Asia University's computer labs would allow the software to be installed there.

CREATING EBOOKS FOR USE BY STUDENTS

Stories written by students were used because:

- Students should generally be able to comprehend other students' writing. In other words, both the vocabulary and grammar used by other students should be comprehensible. Of course, since students' abilities differ, the grammar and vocabulary used by some students will be challenging to others.
- Students should have a high interest in reading their own and their friends' stories.
- Hopefully, students would begin to realize that they can communicate using English.

The process used was as follows:

1. The stories were typed into separate Word documents and the pictures that students used while writing their stories were included.
2. After downloading and installing the "Read in Microsoft Reader" add-in, the eBooks were created by simply clicking on the Microsoft Reader icon. For details on creating spoken eBooks, see Ware (2003).

The longest of these student stories was 343 words long. It took about 10 seconds to convert this story from a Word document into an eBook. (Longer documents of about 3,000 words take only 20 seconds.) Once converted, it is easy to play and listen to the eBooks (see Appendix A for details). EBooks created on an English computer play well on a Japanese Windows ME computer; however, there are problems when they are transferred to a Japanese Windows 2000 computer.

Problems using a non-English Windows 2000 Operating System

Instead of sounding like English, eBooks that are played on Japanese Windows 2000 computers are read with a katakana-like pronunciation. I contacted Microsoft about these problems via their Online Support website and learned that starting with Windows 2000, the text-to-speech engine has been embedded in the operating system. Apparently, the pronunciation algorithms are altered to match the native language of the operating system. Thus, under the Japanese Windows 2000 (and later) operating systems, the number *90* will be pronounced as "*kyu-jyu*" and "*internet*" will sound like "*in-ta-netto*." Similar results would take place on other non-English operating systems.

A Solution: Using "AVI" Movie Files

The solution I chose was to make "movies" of the eBooks being read on a computer with an English operating system. I used TechSmith's Camtasia Studio to record an English

desktop computer reading the eBooks. The resulting movies ("AVI" files) were then copied to a CD-ROM and transferred to the computer lab. (For details on how Camtasia Studio was used to create these movies, see Ware [2003].)

STUDENT LISTENING PRACTICE USING EBOOKS

A hyperlinked Word document was created in the computer lab to make it easier for students to access the different stories. (See Appendix B for copies of the Word document and the instructions students used in the computer labs.)

Students watched and listened to these movie files using the Microsoft Windows Media Player. (For details, see Appendix C.) They then completed worksheets that required them to give the story title, an evaluation of the story, and to write two sentences demonstrating their understanding of the story.

FINAL SURVEY AND CONCLUSION

At the end of the second day of reading and listening using the computers, the students were asked to fill out a survey about these classes. The results, as shown in the tables below, were as follows: sixty-one percent said they understood 95% to 100%, and large percentages of the students also rated these classes highly and thought they were useful for learning English.

% Understood	% of Ss (n=68)
100%	21%
95%	40%
90%	1%
85%	28%
75%	9%
50%	1%

Rate these FE classes:	% of Ss (n=68)
Some of the best.	41%
These classes were good.	46%
Fairly Interesting	10%
Not very good.	3%

Can these classes help teach you English?	% of Ss (n=68)
Yes, definitely!	34%
Yes, I think so.	47%
Maybe a little.	19%

I conclude that spoken eBooks have the potential of providing high-interest listening lessons that students can both benefit from and use independently.

AREAS FOR FURTHER RESEARCH

An extension of this study would be to make the movie files accessible using a web page so that students could practice listening using their home computers. It would be interesting to have a series of classes that use the Microsoft Reader and to do pre- and post-listening tests to see if students' listening skills actually improved. As a variation, since the Camtasia Studio has the option of altering a movie's sound, the Microsoft Reader software could be used for the video portion of the movie and then one or more native English speakers could read the text at the same speed as the Reader's highlighted words.

References

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ScanSoft (2002). Scansoft RealSpeak™ family: The standard in text-to-speech. *ScanSoft Productivity without Boundaries Series.* Retrieved October 18, 2002, from ftp://ftp.scansoft.com/pub/whitepapers/realspeakfamily.pdf (www.scansoft.com/whitepapers/download.asp)

Ware, J. L. (2003). Creating spoken eBooks. *CELE Journal Number Eleven.* Tokyo, Japan: The Center for English Language Education, Asia University.

Appendix A

Using the Microsoft Reader

1. Start the Microsoft Reader by clicking on the Reader icon (). The Microsoft Reader will open and display the Library view. (See the left half of Figure 4 below.)
2. When using the text-to-speech component of the Microsoft Reader, use the Settings menu (on the lower left of the window) to make sure
    a. that the Voice settings (on page 4) do not have "Verbosity" checked, and
    b. that "Highlight text as it is read" is checked.
    c. It is also nice to have the Visual guides on page 3 checked.
    d. (See Figure 3.)

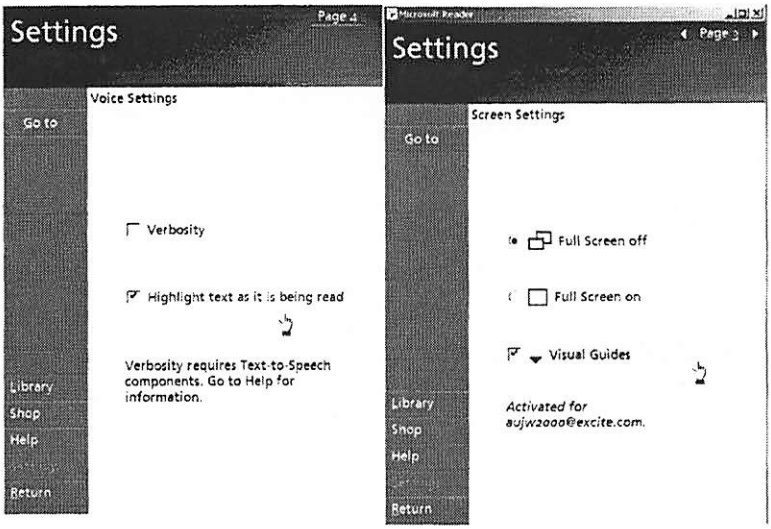


Figure 3 – Microsoft Reader Settings

3. From the Library view, click on the title of the desired eBook. That eBook's title page is then displayed. (See the right half of Figure 4 below.)
4. You can either click on the title or use the "Go to" menu to start reading the eBook. (See the right half of Figure 4 below.) The "Begin playing" menu option tells the Reader to start reading the eBook using the text-to-speech component of the Microsoft Reader.

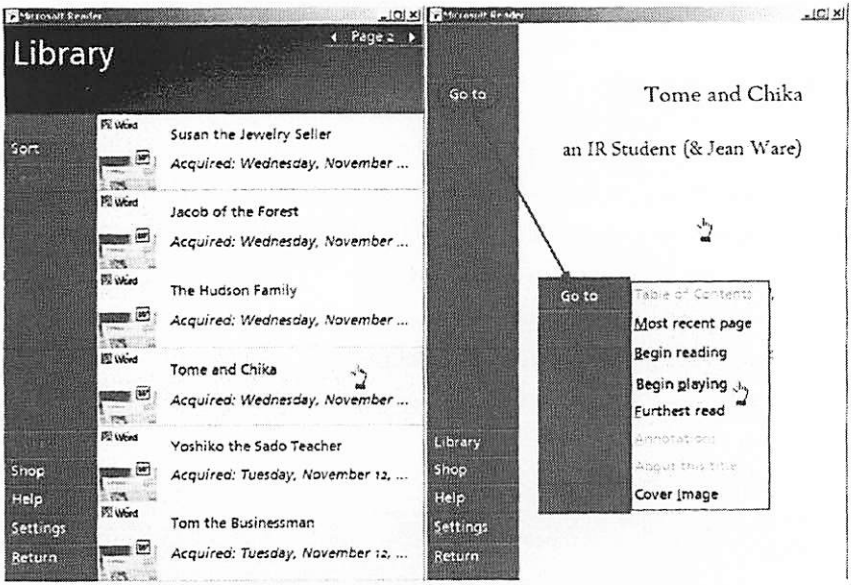


Figure 4 – Starting the Microsoft Reader

EBooks can also be controlled using the arrow keys at the bottom of the window. (See Figure 5.) As the text is read, the Microsoft Reader automatically turns the pages and highlights the words as they are being read. To change to a different eBook, click on the eBook title at the top left of the window and select the Library menu option.

Figure 5 shows the complete student-written eBook (displayed as two pages) that was referenced at the beginning of this paper.

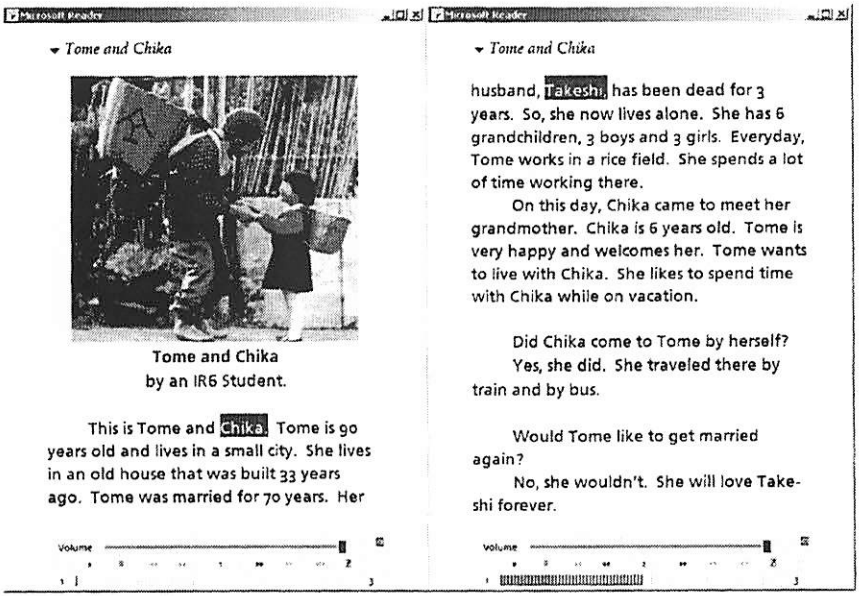


Figure 5 – Reading an eBook (the current word on both pages is highlighted)

Appendix B

Handouts used by the Students in the Computer Labs

The following pages show the hyperlinked Word document and the instructions that students used in the computer labs.

FE Stories - Ctrl+Click the Title to Read

Title	
	Anna the Biologist
	David the Doctor
	Georgie Relaxing
	Jack the Chef
	Jacob of the Forest
	James the Mailman
	Kayo and Aya
	Konoha the Woman Soldier
	Maria the Bakery Worker
	Mark a man of Mystery
	Mark the Fireman
	Nancy the Photographer

Title	
	Paul the Fisherman
	Richard the Mystery Man
	Robby the Police Officer
	Rosa the Computer Operator
	Sad Nikita
	Susan the Jewelry Seller
	Susan the Sheepherder
	The Hudson Family
	Thomas the Postman
	Tom the Businessman
	Tome and Chika
	Yoshiko the Sado Teacher

Reading and Listening Using the Computer

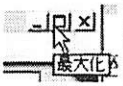
1. **At the beginning of class:** Log on to the computer using your student ID (for example, b214999) and password.
2. Jean will send you a file. You will see an icon like this (one on the right) on your computer monitor. The icon has "ECOLE" as the start of its name.

3. Click on this icon. Word will open.
4. Look at the pictures and the titles. Choose a story to read. Press Ctrl and click the left mouse button. WAIT. *Windows Media Player* will start playing that story.

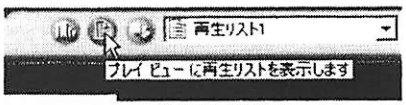
Title	
	Anna the Biologist

	Title
	Sad Nikita

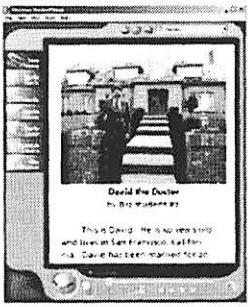
5. Click on the square box (on the right) in the upper right corner of *Windows Media Player* to make it larger and easier to read.



6. Hide the "Play List" in now playing. (This makes the window larger.)



7. Change the size of the *Windows Media Player*. Make it tall and narrow. It should look like this:



8. To change to a new story, click on the *FE Stories* document, or click on the **FE Stories** button at the bottom of your monitor.

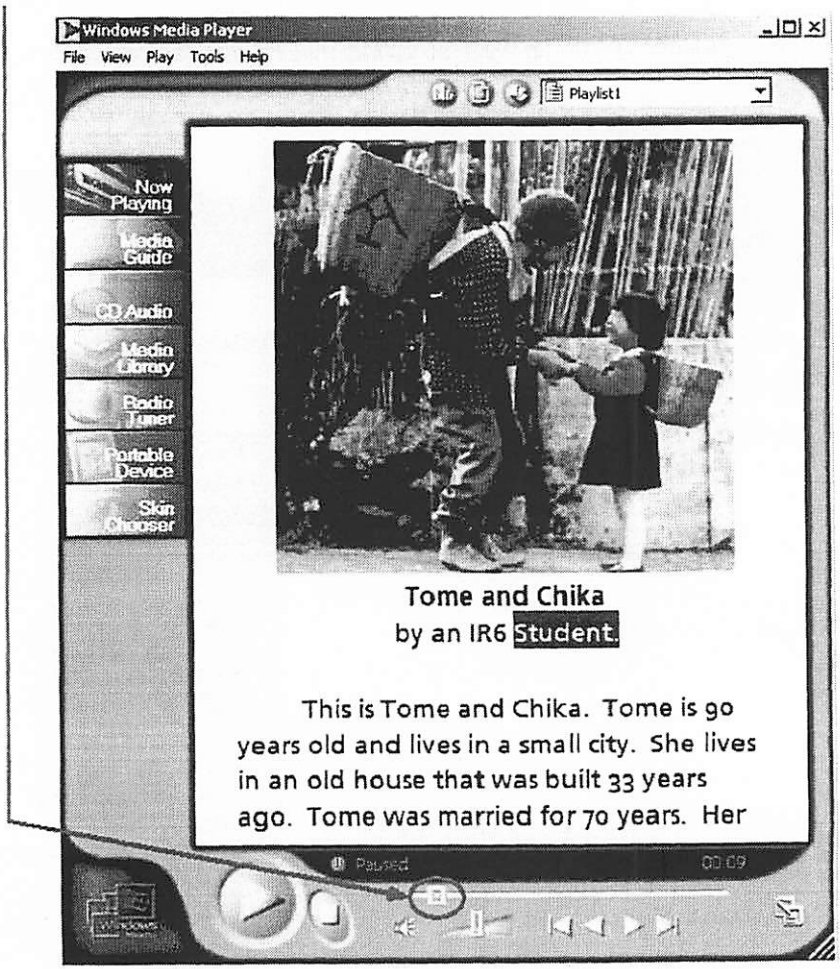
9. **At the end of class:**
   (a) Log off of the computer. Click on the Start button, then "*Log off*" (or select "*Shut Down*" then "*Log off.*") Don't shut down the computer. Leave it running.
   (b) Do your Participation Points for today.
   (c) Give Jean your "*Computer Reading and Listening*" paper.

Appendix C

Watching Movies using the Windows Media Player

The Windows Media Player operates like a VCR. Use the larger [II] pause button to stop the video. Use the play button [▶] to resume playing.

The square slider can be used to quickly move to anywhere within the movie.



Appendix D

Web Addresses for Reader Software and eBooks

This appendix gives some Internet addresses for eBook reader software. It is followed by Internet addresses for purchased and free eBooks.

Summary of Software Web Addresses

The software used in this project is listed at the top of the following table. It includes those provided by Microsoft, TechSmith, and Hyperionics. Other providers of eBook readers are listed towards the bottom.

Company or Organization	Software	Address
Microsoft®	Reader™ 2.1 (for PC)	http://www.microsoft.com/reader/downloads/pc.asp
Microsoft®	Reader Activation	http://www.microsoft.com/reader/info/activation.asp
Microsoft®	Text-to-Speech 1.0 (add-in)	http://www.microsoft.com/reader/downloads/tts.asp
Microsoft®	Read in Microsoft Reader™ add-in for Microsoft Word	http://www.microsoft.com/reader/downloads/rmr.asp
Microsoft®	Windows Media Player	http://www.microsoft.com/windows/windowsmedia/download/default.asp
TechSmith® Corp.	Camtasia Studio (desktop recording software)	http://www.techsmith.com/products/studio/default.asp
Hyperionics	HyperSnap-DX™ (a screen capture and image editing tool)	http://www.hyperionics.com/index.asp?Page=hsdx/changelog.asp
Adobe®	Adobe eBook Reader	http://www.adobe.com/products/ebookreader
Benetech Bookshare	Daisy Reader & Victor Reader Software	http://www.bookshare.org/web/MembersDownloads.html
Global Mentor Inc.	Mentoract™ Reader (Java based)	http://www.globalmentor.com/software/reader/
ION eMonocle	eMonocle	http://www.ionsystems.com/emonocle/
Mobipocket	Mobipocket Reader	http://www.mobipocket.com/en/DownloadSoft/DownLoadReaderStep1.asp
OverDrive	Palm Reader	http://ssl.overdrive.com/partners/palm/DesktopReader.asp
OverDrive Inc.	ReaderWorks Standard 2.0 (creates Microsoft eBooks)	http://www.overdrive.com/readerworks

Some places where eBooks may be purchased

http://www.amazon.com
http://www.powells.com/ebookstore/ebooks.html
http://www.barnesandnoble.com
http://www.cokesbury.com
http://www.palmdigitalmedia.com
http://www.galaxylibrary.com
http://www.toptwentychristian.com

Sources of Free text and eBooks

Most of the eBook sellers above have a selection of free eBooks. The following are additional sources of free eBooks.

What	Where
Alex Catalogue of Electronic Texts	http://www.infomotions.com/alex
Bibliomania (A collection of literary classics)	http://www.columbia.edu/acis/bartleby
GlobalMentor Publishing (OEB versions of the Project Gutenberg texts)	http://www.globalmentor.com/bookstore/
Globusz Publishing	http://www.globusz.com
Internet Public Library	http://www.ipl.org
ION Systems & Galaxy Library	http://www.ionsystems.com/emonocle/OeB_books
Project Gutenberg (public domain books, generally published before 1923)	http://www.promo.net/pg
Public Domain Reader	http://pdreader.org
Sunsite Berkeley Digital Library	http://sunsite.berkeley.edu
The Humanities Text Initiative part of the University of Michigan's Digital Library.	http://www.hti.umich.edu
University of Pennsylvania Online Books	http://onlinebooks.library.upenn.edu
University of Virginia Library (an extensive collection of eBooks)	http://etext.lib.virginia.edu/uvaonline.html

Sources for Useful Information about eBooks

In addition to the websites by the developers of eBook reader software, the following websites are particularly informative.

What	Where
Open an eBook	http://www.openanebook.org
Open eBook Forum	http://www.openebook.org